

## CLAIMS

Therefore, having thus described the invention, at least the following is claimed:

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- 1 1. A method for managing interaction with a presentation of a tree structure in a  
2 graphical user interface, the method comprising the steps of:  
3 displaying a tree structure on a first portion of a graphical user interface;  
4 receiving a search request for an object in the tree structure having a  
5 predefined value via a second portion of the graphical user interface;  
6 displaying a search result in a third portion of the graphical user interface, the  
7 search result comprising one or more locations that satisfy the search request; and  
8 in response to selection of one of the locations, modifying the tree structure to  
9 display the selected location of the object having the predefined value.
- 1 2. The method of claim 1, wherein the step of modifying the tree structure to  
2 display the selected location comprises expanding the tree structure.
- 1 3. The method of claim 1, wherein the step of modifying the tree structure to  
2 display the selected location comprises highlighting the object having the predefined  
3 value.
- 1 4. The method of claim 1, wherein the step of receiving a search request for an  
2 object comprises the step of receiving text via a text box displayed in the second  
3 portion of the graphical user interface.

1 5. The method of claim 1, wherein the third portion of the graphical user  
2 interface comprises a pop-up window.

1 6. The method of claim 1, wherein the tree structure comprises one or more  
2 parent objects, at least one of the parent objects having one or more child objects.

1 7. The method of claim 6, wherein the tree structure represents the contents of a  
2 computer.

1 8. The method of claim 1, wherein the tree structure comprises a root object, one  
2 or more first-level objects, one or more second-level objects, and one or more third-  
3 level objects.

- 1 9. The method of claim 8, wherein:
- 2 the tree structure correlates to a model of a printed circuit board used in an x-
- 3 ray inspection control system, the printed circuit board having one or more
- 4 components having one or more pins soldered to the printed circuit board;
- 5 the root object corresponds to a family object that specifies a type of solder
- 6 joint;
- 7 the one or more first-level objects correspond to a package object that specifies
- 8 a type of component;
- 9 the one or more second-level objects correspond to an instance that specifies a
- 10 unique designator for a package; and
- 11 the one or more third-level objects correspond to a pin object that specifies a
- 12 unique pin number for a specific component.

1 10. A system for managing interaction with a presentation of a tree structure in a  
2 graphical user interface, the system comprising:  
3 logic configured to:  
4 display a tree structure on a first portion of a graphical user interface;  
5 receive a search request for an object in the tree structure having a  
6 predefined value via a second portion of the graphical user interface;  
7 display a search result in a third portion of the graphical user interface,  
8 the search result comprising one or more locations that satisfy the search  
9 request; and  
10 modify, in response to selection of one of the locations, the tree  
11 structure to display the selected location of the object having the predefined  
12 value;  
13 a processing device configured to implement the logic; and  
14 a display device configured to support the graphical user interface.

1 11. The system of claim 10, wherein the logic is further configured to modify the  
2 tree structure to display the selected location by expanding the tree structure.

1 12. The system of claim 10, wherein the logic is further configured to modify the  
2 tree structure to display the selected location by highlighting the object having the  
3 predefined value.

1 13. The system of claim 10, wherein the logic is further configured to receive the  
2 search request for an object via a text box displayed in the second portion of the  
3 graphical user interface.

1 14. The system of claim 10, wherein the third portion of the graphical user  
2 interface comprises a pop-up window.

1 15. The system of claim 10, wherein the tree structure comprises one or more  
2 parent objects, at least one of the parent objects having one or more child objects.

1 16. The system of claim 15, wherein the tree structure represents the contents of a  
2 computer.

1 17. The system of claim 10, wherein the tree structure comprises a root object, one  
2 or more first-level objects, one or more second-level objects, and one or more third-  
3 level objects.

- 1 18. The system of claim 17, wherein:  
2 the tree structure correlates to a model of a printed circuit board used in an x-  
3 ray inspection control system, the printed circuit board having one or more  
4 components having one or more pins soldered to the printed circuit board;  
5 the root object corresponds to a family object that specifies a type of solder  
6 joint;  
7 the one or more first-level objects correspond to a package object that specifies  
8 a type of component;  
9 the one or more second-level objects correspond to an instance that specifies a  
10 unique designator for a package; and  
11 the one or more third-level objects correspond to a pin object that specifies a unique  
12 pin number for a specific component.

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1 19. A computer program embodied on a computer-readable medium for managing  
2 interaction with a presentation of a tree structure in a graphical user interface, the  
3 computer program comprising logic configured to:

4 display a tree structure on a first portion of a graphical user interface;  
5 receive a search request for an object in the tree structure having a predefined  
6 value via a second portion of the graphical user interface;  
7 display a search result in a third portion of the graphical user interface, the  
8 search result comprising one or more locations that satisfy the search request; and  
9 modify, in response to selection of one of the locations, the tree structure to  
10 display the selected location of the object having the predefined value.

1 20. The computer program of claim 19, wherein the logic is further configured to  
2 modify the tree structure to display the selected location by expanding the tree  
3 structure.

1 21. The computer program of claim 1, wherein the logic is further configured to  
2 modify the tree structure to display the selected location by highlighting the object  
3 having the predefined value.

1 22. The computer program of claim 19, wherein the logic is further configured to  
2 receive the search request for an object via a text box displayed in the second portion  
3 of the graphical user interface.

1 23. The computer program of claim 19, wherein the third portion of the graphical  
2 user interface comprises a pop-up window.

1 24. The computer program of claim 19, wherein the tree structure comprises one  
2 or more parent objects, at least one of the parent objects having one or more child  
3 objects.

1 25. The computer program of claim 24, wherein the tree structure represents the  
2 contents of a computer.

1 26. The computer program of claim 19, wherein the tree structure comprises a root  
2 object, one or more first-level objects, one or more second-level objects, and one or  
3 more third-level objects.



- 1 27. The computer program of claim 26, wherein:
- 2 the tree structure correlates to a model of a printed circuit board used in an x-
- 3 ray inspection control system, the printed circuit board having one or more
- 4 components having one or more pins soldered to the printed circuit board;
- 5 the root object corresponds to a family object that specifies a type of solder
- 6 joint;
- 7 the one or more first-level objects correspond to a package object that specifies
- 8 a type of component;
- 9 the one or more second-level objects correspond to an instance that specifies a
- 10 unique designator for a package; and
- 11 the one or more third-level objects correspond to a pin object that specifies a unique
- 12 pin number for a specific component.

1 28. A system for managing interaction with a presentation of a tree structure in a  
2 graphical user interface, the system comprising:  
3 a means for displaying a tree structure on a first portion of a graphical user  
4 interface;  
5 a means for receiving a search request for an object in the tree structure having  
6 a predefined value via a second portion of the graphical user interface;  
7 a means for displaying a search result in a third portion of the graphical user  
8 interface, the search result comprising one or more locations that satisfy the search  
9 request; and  
10 a means for modifying the tree structure to display the selected location of the  
11 object having the predefined value in response to selection of one of the locations.

1 29. The system of claim 28, wherein the means for modifying the tree structure  
2 logic expands the tree structure.

1 30. The system of claim 30, wherein the tree structure comprises a root object, one  
2 or more first-level objects, one or more second-level objects, and one or more third-  
3 level objects.

- 1 31. The system of claim 30, wherein:  
2 the tree structure correlates to a model of a printed circuit board used in an x-  
3 ray inspection control system, the printed circuit board having one or more  
4 components having one or more pins soldered to the printed circuit board;  
5 the root object corresponds to a family object that specifies a type of solder  
6 joint;  
7 the one or more first-level objects correspond to a package object that specifies  
8 a type of component;  
9 the one or more second-level objects correspond to an instance that specifies a  
10 unique designator for a package; and  
11 the one or more third-level objects correspond to a pin object that specifies a unique  
12 pin number for a specific component.

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